

E X H I B I T A

Claim 1. Previously cancelled.

Claim 2. In a system utilizing a fine grinding wheel, the wheel having a fine grinding surface with an outer radial extent to an outer diameter,


C the improvement of a dressing wheel system, the dressing wheel system including dressing material, said dressing material having a radial extent less than the radial extent of the fine grinding surface, means to bring said dressing material and the outer radial extent of the fine grinding surface into physical contact,

movement means to move said dressing material and the fine grinding surface relative to one another and,

means to flex the outer radial extent of the grinding surface to form a concave surface during operation of said movement means to provide a flat to convex shape to the fine grinding surface.

Claims 3-12. Previously cancelled.

Claim 13. In a system utilizing a fine grinding wheel, the wheel having a fine grinding surface with a radial extent to an outside diameter,

 the improvement of a dressing wheel system, the dressing wheel system including dressing material, said dressing material having a radial extent less than the radial extent of the fine grinding surface, means to bring said dressing material and the radial extent of the fine grinding surface into physical contact,

and movement means to move said dressing material and the fine grinding surface relative to one another to dress the fine grinding surface to a convex shape.

Claim 14. The system of claim 13 characterized in that said convex shape includes a taper.

Claim 15. The system of claim 14 characterized in that said convex shape includes at least one step.

Claim 16. The system of claim 13 characterized in that said convex shape is a curved shape.

Claims 17-23. Previously cancelled.

Claim 24. In a system utilizing a fine grinding wheel, the wheel having a fine grinding surface with a radial extent to an outside diameter, the system having a production carrier assembly including planet gears and a pinion drive,

the improvement of a dressing wheel system, the dressing wheel system including dressing material, said dressing material having a radial extent less than the radial extent of the fine grinding surface, means to bring said dressing material and the radial extent of the fine grinding surface into physical contact,

movement means to move said dressing material and the fine grinding surface relative to one another to provide a convex shape to the fine grinding surface,

said movement means utilizing at least part of the production carrier assembly and the pinion drive, and said convex shape including a taper.

Claim 25. The system of claim 24 characterized in that said convex shape includes at least one step.

Claim 26. In a system utilizing a fine grinding wheel, the wheel having a fine grinding surface with a radial extent to an outside diameter, the system having a production carrier assembly including planet gears and a pinion drive,

the improvement of a dressing wheel system, the dressing wheel system including dressing material, said dressing material having a radial extent less than the radial extent of the fine grinding surface, means to bring said dressing material and the radial extent of the fine grinding surface into physical contact,

movement means to move said dressing material and the fine grinding surface relative to one another to provide a convex shape to the fine grinding surface,

said movement means utilizing at least part of the production carrier assembly and the pinion drive, and said convex shape is a curved shape.

Claim 27. Previously cancelled.

Claim 28. In a system utilizing a grinding wheel, the improvement of a dresser and movement means to move said dresser in respect to the grinding wheel.

Claim 29. A method for dressing a fine grinding wheel, the wheel having a fine grinding surface with a total radial extent to an outside diameter, method comprising
C2 bringing dressing material and the outside diameter of the fine grinding surface into physical contact with said dressing

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material having a dressed radial extent less than the total radial extent of the fine grinding surface,

and moving said dressing material and the fine grinding surface relative to one another to provide a convex shape to said dressed radial extent of the fine grinding surface.

Claim 30. In a system utilizing a rotary fine grinding wheel, the rotary wheel having a solid fine grinding surface with an outer extent neighboring an outside circumference with ^{shape} (an outer extent) extending from 0-100 of the rotary fine grinding wheel, the improvement of the outer 20-40% of the ^{ends} (outer extent) of the solid fine grinding wheel having a convex shape.

Claim 31. In a system utilizing a fine grinding wheel, the wheel having a fine grinding surface with an outer extent neighboring an outside circumference,

the fine grinding wheel being used in a system having a production assembly, the improvement of the outer 20-40% of the outer extent of the fine grinding wheel having a convex shape,

C2 and said outer 20-40% of the outer extent of the grinding wheel being dressed to said convex shape utilizing at least part of the production assembly.

Claim 32. The system of claim 31 characterized in that the fine grinding wheel is dressed by differential movement means and said differential movement means including at least part of the production assembly.

Claim 33. The system of claim 32 characterized in that said differential movement means includes planet gears.

Claim 34. The system of claim 33 wherein the system includes a production assembly having a pinion drive gear and characterized by said differential movement means of said dressing wheel system utilizes the pinion drive gear.

Claim 35. The system of claim 34 wherein the pinion drive has a gear with a diameter and characterized in that said differential movement means includes an intermediate pinion extender gear, and said extender gear increasing the apparent diameter of the pinion drive gear.

Claim 36. The system of claim 31 wherein the system includes a production assembly having a pinion drive gear having a diameter and a stationary outer ring, and characterized by said differential movement means of said dressing wheel system utilizing the pinion drive gear,

said differential movement means also including an intermediate pinion extender gear, said extender gear increasing the apparent diameter of the pinion drive gear,

said differential movement means utilizing the stationary outer ring, planet dresser wheels, means to connect said dressing material to said planet dresser wheels, and said planet dresser wheels being drivingly located between said extender gear and the stationary outer gear.

Claim 37. The system of claim 31 wherein the fine grinding surface is formed of cutting materials embedded in a carrier and characterized by the dressing wheel system including removal means to remove the carrier to expose the cutting materials.

Claim 38. The system of claim 37 characterized in that said differential movement means includes planet gears and means selectively to insert said removal means to said planet gears.

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Claim 39. In a system utilizing a fine grinding wheel, the wheel having a fine grinding surface with an outer extent neighboring an outside circumference,

the improvement of the outer 20-40% of the outer extent of the fine grinding wheel having a convex shape, and said convex shape includes a taper.

Claim 40. In a system utilizing a fine grinding wheel, the wheel having a fine grinding surface with an outer extent neighboring an outside circumference,

the improvement of the outer 20-40% of the outer extent of the fine grinding wheel having a convex shape, and said convex shape includes at least one step.

Claim 41. In a system utilizing a fine grinding wheel, the wheel having a fine grinding surface with an outer extent neighboring an outside circumference,

the improvement of the outer 20-40% of the outer extent of the fine grinding wheel having a convex shape, and said convex shape is a curved shape.